Description of a new species in the genus *Amata* Fabricius, 1807 from Iran (Lepidoptera: Arctiidae, Syntominae, Syntomini)

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Abstract: A new species of the tribe Syntomini, *Amata (Syntomis)* ***harandii*** **sp. n.**, is described from the southwestern Zagros mountains of the Khuzestan province in Iran. The holotype male and the salient characteristics of the species are illustrated and compared with those of relevant species of the *A. sintenisi* group, from which it is distinguishable by its modified thoracic and wing spots. Its male genitalia structures are also well differentiated. The female is unknown. Brief information is given about its habitat. The holotype is deposited in the Pest and Plant Diseases Research Institute (PPDRI), Tehran, Iran.

Beschreibung einer neuen Art der Gattung *Amata* Fabricius, 1807 aus Iran (Lepidoptera: Arctiidae, Syntominae, Syntomini)

Zusammenfassung: Aus der iranischen Provinz Khuzestan wird *Amata (Syntomis)* ***harandii*** **sp. n.** der Tribus Syntomini beschrieben. Charakteristische Merkmale der neuen Art, der männliche Holotypus sowie deren Genitalstrukturen werden abgebildet und mit denen nächstverwandter Arten verglichen. Über das Habitat werden kurze Angaben gemacht. *A. (S.) harandii* steht habituell der Artengruppe von *Amata (Syntomis) sintenisi* (Standfuss, 1892) und *A. (S.) mestralii* (Bugnion, 1837) nahe, zeigt jedoch abweichende Thorakal- und Flügelfleckung sowie eine arttypische Genitalmorphologie. Das Weibchen ist unbekannt. Der Holotypus wird im Pest and Plant Diseases Research Institute (PPDRI), Tehran, Iran, aufbewahrt.

توصيف يک گونه جديد از جنس *Amata* Fabricius, 1807 (subgenus *Syntomis* Ochsenheimer, 1808): *A. harandii*, از جنوب غربی زاگرس در استان خوزستان ايران (Lepidoptera: Arctiidae, Syntominae, Syntomini)

در اين مقاله گونه اي از قبيله Syntomini با نام *Amata harandii* توصيف مي گردد. خصوصيات بارز اين گونه به همراه توصيف نمونه هولوتيپ (♂) و ژنيتاليای آن شرح داده و با ديگر گونه هاي وابسته درون species-group مقايسه مي گردد. گونه جديد در مجموعه گونه اي (species-complex) گونه هاي *A. mestralii* (Bubnion, 1837), *Amata sintenisi* (Standfuss, 1892) قرار دارد و با خالهاي متفاوت و مشخص بالهاي عقب قابل تشخيص مي باشد.همچنين ژنيتالي نر آن به کاملا متفاوت مي باشد.ماده هنوز ناشناخته باقي مانده است. نمونه هولوتيپ در موسسه تحقيقات و بررسي آفات اوين در تهران ، موزه حشرات هايك ميرزايانس قرار مي گيرد.

Introduction

Iran is a large country with diverse climates and habitats and includes many entomologically unexplored areas, and its diverse biota include a rich but poorly known fauna of Lepidoptera. A recent systematic search for early-season moths on the southwestern side of the Zagros mountains by the junior author and his colleague Amir Hossein Harandi (Esfahan) discovered a new syntomine species, which is here described as *Amata harandii*. This new species is evidently the easternmost representative of a levatine-hyrcanian species-group in the genus *Amata,* which comprises species such as *A. (Syntomis) sintenisi* (Standfuss, 1892), *A.* (*S.*) *tanina* (de Freina, 1982) and *A. mestralii* (Bugnion, 1837), and it represents the 8th species of the tribe Syntomini known from Iran (de Freina 2004, 2008).

Amata (Syntomis) ***harandii*** **sp. n.**

Holotype ♂ (Fig. 1): Iran, Khuzestan, Izeh, 400 m, 2. iv. 2008, leg. Naderi, in coll. Pest and Plant Diseases Research Institute (PPDRI), Tehran, Iran.

Paratypes (44 ♂♂): same data as holotype, leg. Naderi & Harandi, 9 in coll. de Freina, Munich (Germany) (1 with genitalia prep. deFr 2008/30, fec. et coll. de Freina); 16 in coll. Naderi (Iran); 1 in National Naturhistorical Museum (NNHM) of Iran (Tehran); 2 in coll. ten Hagen, Mömlingen (Germany), 16 in coll. Harandi, Esfahan (Iran).

Etymology: The new species is named in honour of our Iranian colleague Amir Hossein Harandi.

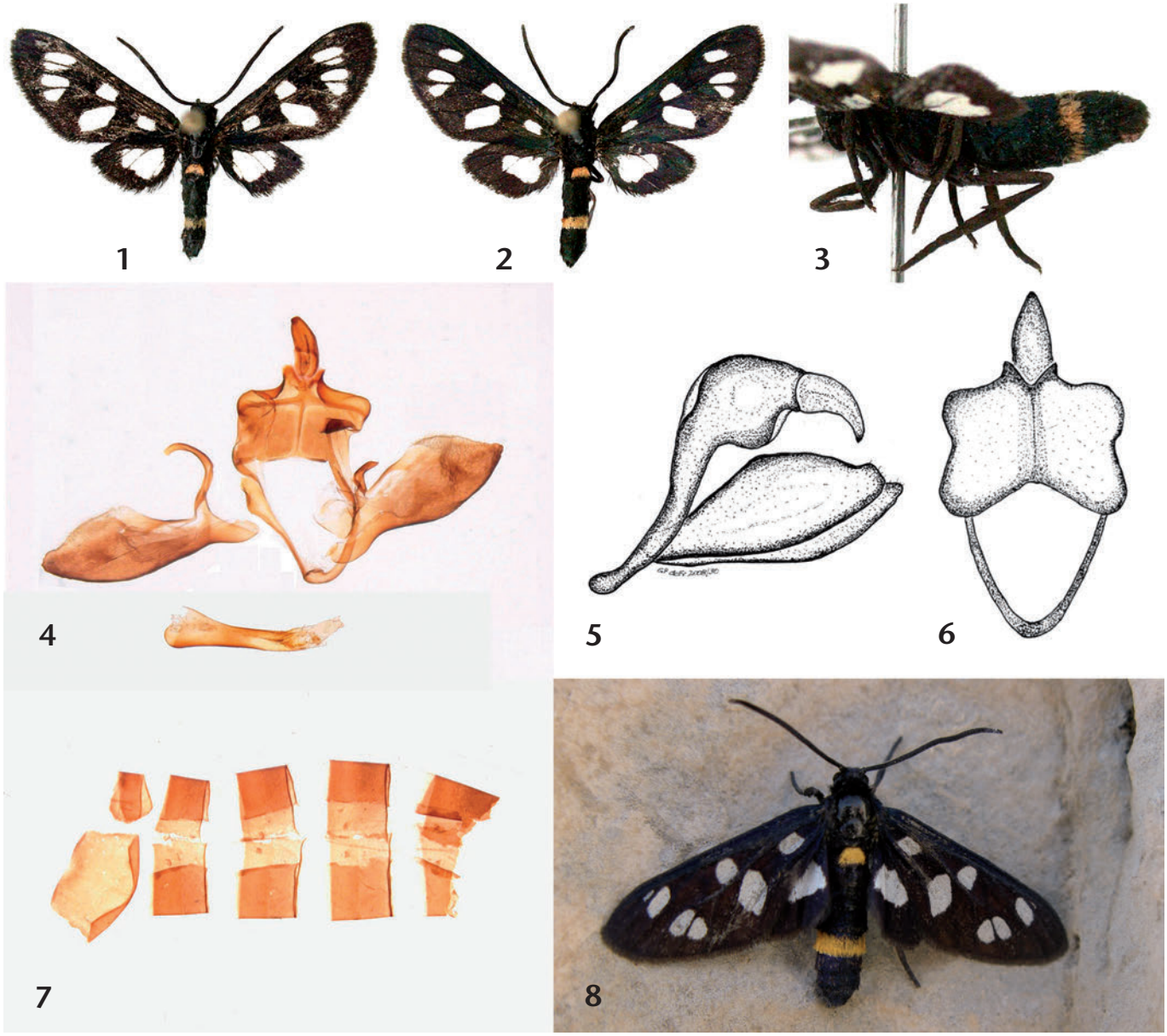
Description

(Figs. 1–3, 8.) Lenght of forewing (from apex to base) 11.0–12.1 mm (holotype 12 mm), expanse of wings 19.0–21.0 mm, body length 9.1–10.2 mm. Ground colour of body, wings and fringe black with or without faint metallic green; antennae black, simply filiform, stout, faintly clubbed and not tapered distally; fringe of forewings short, of hindwings dorsally longer; frons, patagia and tegulae black, sparsely, shortly setose; proboscis well developed; labial palpus shortly tufted but with some longer, strong bristles; tarsi greyish black; pectus with one faint, yellowish lateral spot only; abdomen dorsally with yellow patch on basal segment and yellow band on 5th, more or less completely yellow ventrally.

Forewing with 6 widely separated semi-hyaline whitish spots, all enlarged, especially the lower one of the central pair; spot m_1 below base of cell subquadrate; beyond this 2 larger central, clearly separated ones, spot m_2 at end of cell wedge-shaped, spot m_3 an oblique patch below basal part of vein 2; subapical spot m_4 above vein 6 elongate, spots m_5 and m_6 between veins 3 and 5 only narrowly separated; fringe only black, near apex not creamy whitish.

Hindwing ovate, apex and dorsum pointed, with large white patch below cell and vein Cu_2, conjoined with extending spots above vein 2 and below vein A_2, narrowing to inner margin, only separated internally by black vein Cu_2.

Underside with identical white spots as upperside, black ground colour of both wings duller.



Colour plate: *Amata (Syntomis) harandii* sp. n. **Fig. 1:** ♂ holotype, Iran, Khuzestan, Izeh, 400 m, 2. IV. 2008, leg. NADERI & HARANDI, in PPDRI, Tehran, Iran (expanse of wings 20 mm). **Fig. 2:** ♂ paratype, same data as holotype, coll. DE FREINA. **Fig. 3:** ♂ paratype, thorax and abdomen, lateroventral view. **Fig. 4–6:** ♂ genitalia (paratype) (genitalia prep. DEFR 2008/30, fec. et coll. DE FREINA). **Fig. 4:** ventral view with phallus removed, left valva separated, and (below) phallus, lateral. **Fig. 5:** lateral view. **Fig. 6:** uncus and tegumen, dorsal view. **Fig. 7:** ♂ Abdomen with sternite and tergite (lateral, 8th tergite ventral view; prep. DEFR 2008/30.1). **Fig. 8:** ♂ paratype, warming up on a limestone rock.

♂ genitalia (Figs. 4–6) with valvae similar, symmetrical; uncus-tegumen complex and cornuti-structure of phallus typical of subgenus *Syntomis*.

♀. Unknown, probably brachypterous.

Morphological variation

There is no significant variation within the type series. Some specimens show a very small extra speck subapically or between spots m_4 and m_5 only; spot m_1 near the base is sometimes more oval and longer and the hindwing patch varies somewhat in size, sometimes being reduced or tranversely elongated at either end.

Differential diagnosis

The new species is easily distinguished from closely related species such as *A. sintenisi* and *A. tanina* (DE FREINA 1982) by its larger size, greenish tint and enlarged semi-hyaline white spots, especially the lower spot of the central pair. Its genitalia are also distinct but indicate a relationship to *A. (S.) mestralii*, *A. (S.) sintenisi* (see OBRAZTSOV 1966) *and A. (S.) tanina* (see DE FREINA 1982), which however differ in having a stouter, more pronounced and strongly sclerotised uncus with a more strongly hooked tip, the lateral lobes of the tegumen more strongly vaulted, the left valva narrower and somewhat longer and with the processus basalis slenderly sickle-shaped, distally obtuse and more than 3× longer than the twisted processus basalis of the right valva, the latter with a concave subborder basally, only few very slender and short spines on the distal part of the valvae; the phallus less curved, the coecum shorter and less voluminous with the cornuti less strongly confluent but smaller and more slender. In its genitalia *A. harandii* is closest to *A. mestralii*, but

Fig. 9: Type locality in the vicinity of Ilam, Khuzestan.

it differs from the latter mainly in its smaller size and structures such as its stouter antennae (Obraztsov 1966, de Freina 1989).

Habitat, period of flight and distribution

A. harandii appears to be endemic to the southwestern hills of the Zagros mountains in the northwest of the Khuzestan plateau. The type locality (Fig. 9) is an arid rocky hill at 400 m altitude, north of Izeh. These are the first hills of the Zagros from the wide plateau of Khuzestan and thus strongly affected by the warm, humid air masses rolling in from the Persian Gulf, causing heavy precipitations at the end of winter and beginning of spring.

No tall vegetation exists at the type locality, due to the soil texture and also overgrazing.

The most common plant species are *Amygdalus* sp., *Acer* sp., *Astragalus* spp. and some species of grasses (Poaceae).

The ♂♂ of *A. harandii* begin flying at about 9:00 h in a lazy style, nectaring on flowering trees and shrubs. No ♀♀ were seen and the biology of the species remains unknown. At the time of capture the population was obviously at its zenith of flight. Other Lepidoptera recorded from the type locality are *Allancastria loursitana* (Le Cerf, 1908) (Papilionidae), *Euchloe belemia* (Esper, [1800]) (Pieridae), *Lasiommata zagrosica* Lukhtanov & Dantchenko, 2004, *Lasiommata megera* (Linneaus, 1767) (Nymphalidae) and a common unknown species of Microlepidoptera.

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References

de Freina, J. J. (1982): 3. Beitrag zur systematischen Erfassung der Bombyces- und Sphinges-Fauna Kleinasiens. Neue Arten der Gattung *Syntomis* Ochsenheimer, 1808 aus Türkisch-Kurdistan und Aserbeidjan. – Nachrichtenblatt der Bayerischen Entomologen, München, **31** (3): 47–64.

—— (1989): Zur Kenntnis der Verbreitung, Bionomie und Systematik von *Syntomis mestralii* Bugnion, 1837. – Nachrichtenblatt der Bayerischen Entomologen, München, **38** (4): 108–113.

—— (2004): Erstnachweis von *Amata (Syntomis) nigricornis* (Alpheraky, 1833) für die iranische Fauna (Lepidoptera, Arctiidae, Syntominae). – Atalanta, Marktleuthen, **35:** 114–116.

—— (2008): *Amata (Syntomis) beluchistana* n. sp., eine neue iranische Syntomine (Lepidoptera: Arctiidae, Syntominae, Syntomini). – Nachrichten des Entomologischen Vereins Apollo, Frankfurt am Main, N.F. **29** (3/4): 97–107.

Obraztsov, N. S. (1966): Die palaearktischen *Amata*-Arten (Lepidoptera, Ctenuchidae). – Veröffentlichungen der Zoologischen Staatssammlung München, **10:** 1–383.

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